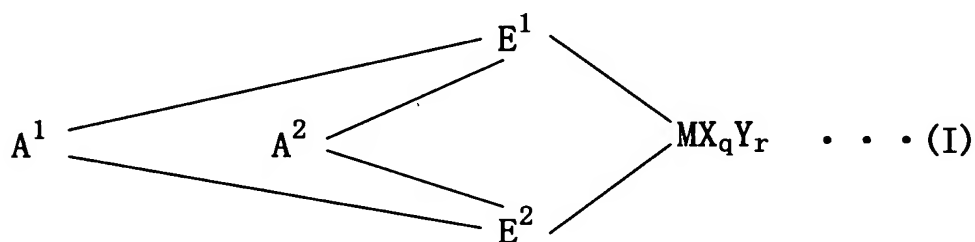


(A) a transition metal compound represented by the following general formula (I):



A¹ and A² are divalent cross-linking groups capable of bonding the two ligands E¹ and E² to each other which may be are same or different from each other, and are

independently a C₁ to C₂₀ hydrocarbon group, a C₁ to C₂₀ ~~halogen-containing~~ halogen-comprising hydrocarbon group, a ~~silicon-containing~~ silicon-comprising group, a ~~germanium-containing~~ germanium-comprising group, a ~~tin-containing~~ tin-comprising group, -O-, -CO-, -S-, -SO₂-, -Se-, -NR¹-, -PR¹-, -P(O)R¹-, -BR¹- or -AlR¹- wherein R¹ is a hydrogen atom, a halogen atom, a C₁ to C₂₀ hydrocarbon group or a C₁ to C₂₀ ~~halogen-containing~~ halogen-comprising hydrocarbon group;

q is an integer of 1 to 5 given by the formula: [(valence of M) - 2]; and

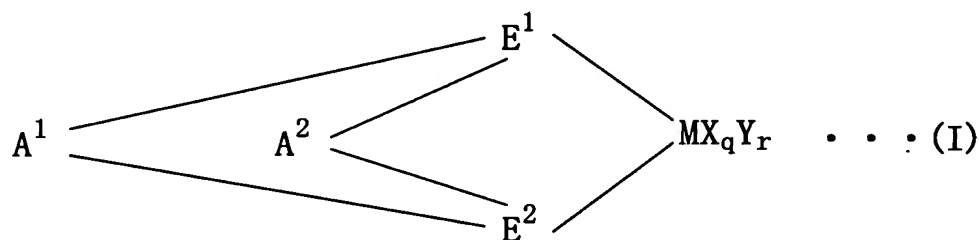
r is an integer of 0 to 3, and

(B) an organoboron compound.

Claim 2 (Currently Amended): A process for producing a highly flowable propylene-based polymer, comprising:

copolymerizing propylene with ethylene and/or a C₄ to C₂₀ α-olefin in the presence of a polymerization catalyst comprising:

(A) a transition metal compound represented by the following ~~general~~ formula (I):



wherein M is a metal element belonging to Groups 3 to 10 or lanthanoid of the Periodic Table;

E¹ and E² are independently a ligand selected from the group consisting of substituted cyclopentadienyl, indenyl, substituted indenyl, heterocyclopentadienyl, substituted heterocyclopentadienyl, amide group, phosphide group, hydrocarbon groups and ~~silicon-~~

~~containing comprising~~ groups, which form a cross-linked structure via A¹ and A² ~~and may be same or different from each other;~~

X is a ligand capable of forming a σ -bond ~~with the proviso that~~ wherein when a plurality of X groups are present, these said X groups ~~may be~~ are same or different from each other, and ~~may be~~ are optionally cross-linked with the other X group, E¹, E² or Y;

Y is a Lewis base ~~with the proviso that~~ wherein when a plurality of Y groups are present, these said Y groups ~~may be~~ are same or different from each other, and ~~may be~~ are optionally cross-linked with the other Y group, E¹, E² or X;

A¹ and A² are divalent cross-linking groups capable of bonding the two ligands E¹ and E² to each other which ~~may be~~ are same or different from each other, and are independently a C₁ to C₂₀ hydrocarbon group, a C₁ to C₂₀ halogen-containing hydrocarbon group, a ~~silicon-containing~~ silicon-comprising group, a ~~germanium-containing~~ germanium-comprising group, a ~~tin-containing~~ tin-comprising group, -O-, -CO-, -S-, -SO₂-, -Se-, -NR¹-, -PR¹-, -P(O)R¹-, -BR¹- or -AlR¹- wherein R¹ is a hydrogen atom, a halogen atom, a C₁ to C₂₀ hydrocarbon group or a C₁ to C₂₀ ~~halogen-containing~~ halogen-comprising hydrocarbon group;

q is an integer of 1 to 5 given by the formula: [(valence of M) - 2]; and

r is an integer of 0 to 3, and

(B) an organoboron compound.

Claim 3 (Currently Amended): A highly flowable propylene-based polymer ~~satisfying the following requirements (1), (2) and (3):~~ wherein the polymer has:

(1) an intrinsic viscosity $[\eta]$ of 0.01 to 0.5 dL/g as measured in a tetralin solvent at 135°C;

(2) a crystalline resin having a melting point (T_m -D) of 0 to 120°C, wherein the melting point ~~being~~ is defined as [[a]] the top of a peak observed on a highest-temperature side in a melting endothermic curve obtained by a differential scanning calorimeter (DSC) when a sample is held in a nitrogen atmosphere at -10°C for 5 min and then heated at a temperature rise rate of 10°C/min; and

(3) a stereoregularity index ([mm]) of 50 to 90 mol%.

Claim 4 (Currently Amended): ~~A highly flowable propylene-based~~ The polymer according to claim 3, wherein the polymer has: ~~satisfying the following requirements (1'), (2') and (3'):~~

(1') an intrinsic viscosity $[\eta]$ of 0.1 to 0.4 dL/g as measured in a tetralin solvent at 135°C;

(2') a crystalline resin having a melting point (T_m -D) of 60 to 120°C, the melting point being defined as a top of a peak observed on a highest-temperature side in a melting endothermic curve obtained by a differential scanning calorimeter (DSC) when a sample is held in a nitrogen atmosphere at -10°C for 5 min and then heated at a temperature rise rate of 10°C/min; and

(3') a mesopentad fraction (mmmm) of 30 to 60 mol%.

Claim 5 (Currently Amended): ~~The highly flowable propylene-based~~ polymer according to claim 3, claim 3 or 4, wherein said polymer further has: ~~satisfies the following requirements (4) and (5):~~

(4) a molecular weight distribution (M_w/M_n) of 4 or lower as measured by gel permeation chromatography (GPC); and

(5) a weight-average molecular weight of 10,000 to 100,000 as measured by GPC.

Claim 6 (Currently Amended): A propylene-based modifier comprising the highly flowable propylene-based polymer as claimed in claim 3.

Claim 7 (Currently Amended): A hot-melt adhesive composition comprising 99 to 50% by weight of the highly flowable propylene-based polymer as claimed in claim 3, ~~3 or 4~~, and 50 to 1% by weight of a tackifier.